WHAT IS CLAIMED IS:

1. An apparatus for detecting a coplanarity of a plurality of leads of an electronic component that laterally extend from a main body thereof, comprising:

a holding device which holds the main body of the electronic component at an upper surface of the main body;

an image taking device which faces the electronic component held by the holding device and has an optical axis that is inclined by a predetermined angle relative to a plane containing a bottom surface of the main body such that in a direction from the image taking device toward the main body, the optical axis goes down in a direction from the upper surface to the bottom surface;

a background forming device which is provided on one of opposite sides of the electronic component that is opposite to the other side thereof on which the image taking device is provided, and which forms a background having an optical characteristic different from an optical characteristic of the leads; and

an image processing device which processes an image of respective end portions of the leads taken by the image taking device and thereby determines the coplanarity of the leads.

2. An apparatus according to claim 1, wherein the background forming device comprises a light emitter which

emits a light toward the electronic component and the image taking device.

3. An apparatus according to claim 1, wherein the holding device comprises a rotating device which rotates the electronic component about an axis line that is perpendicular to the upper surface of the main body and passes through a substantial center of the upper surface.

4. An apparatus according to claim 3, wherein the main body of the electronic component has, in a plan view thereof, a shape having a plurality of sides from each of which the leads laterally extend, and wherein the rotating device rotates the electronic component to an angular position at which said each of the sides of the main body extends in a direction substantially perpendicular to the optical axis of the image taking device, at a position between the axis line and the optical axis.

5. An apparatus according to claim 1, further comprising a judging device which judges, based on the coplanarity determined by the image processing device, whether the electronic component is acceptable.

6. An apparatus for detecting a condition of an electronic component, comprising:

a coplanarity detecting apparatus according to claim

1; and

a second image taking device which is different from a first image taking device as the image taking device of the coplanarity detecting apparatus and which takes an image of at least the bottom surface of the main body of the electronic component as viewed in a direction perpendicular to the bottom surface of the main body,

wherein the image processing device comprises, in addition to a first image processing portion which determines the coplanarity, a second image processing portion which processes the image of the electronic component taken by the second image taking device and thereby determines at least one positional error of the electronic component relative to the holding device in at least one direction parallel to the upper surface of the main body.

7. An apparatus according to claim 6, wherein the first and second image taking devices are provided at respective positions at which the first and second image taking devices can take the image of the leads of the electronic component and the image of the bottom surface of the electronic component, respectively, in a state in which the electronic component is positioned at a same position.

8. An apparatus according to claim 6, further comprising an image-taking-device control portion which first controls the first image taking device to take the image of the

electronic component and then controls the second image taking device to take the image of the electronic component.

9. An apparatus according to claim 8, wherein the holding device comprises a rotating device which rotates the electronic component about an axis line that is perpendicular to the upper surface of the main body and passes through a substantial center of the upper surface, and wherein the image-taking-device control portion controls the rotating device to rotate the electronic component to an angular position at which the electronic component is to be mounted on a circuit substrate, and subsequently controls the second image taking device to take the image of the electronic component.

10. A system for mounting at least one electronic component on a circuit substrate, comprising:

an electronic-component-condition detecting apparatus according to claim 6;

a supplying device which supplies the electronic component to the holding device of the electronic-component-condition detecting apparatus;

a supporting device which supports the circuit substrate;

a moving device which moves, while correcting the positional error of the electronic component detected by the image processing device of the electronic-component-condition detecting device, the holding device holding the electronic

component, from the supplying device to the supporting device via the first and second image taking devices, and allows the holding device to mount the electronic component on the circuit substrate supported by the supporting device; and

a coplanarity-utilizing control means for controlling the moving device while utilizing the coplanarity detected by the coplanarity detecting apparatus of the electronic-component-condition detecting apparatus.

11. A system according to claim 10, wherein the coplanarity detecting apparatus comprises a judging device which judges, based on the coplanarity detected by the image processing device, whether the electronic component is acceptable, and wherein the coplanarity-utilizing control means comprises a discarding control means for controlling, when the judging device judges that the electronic component is not acceptable, the moving device to discard the electronic component at a predetermined discarding position.

12. A system according to claim 10, wherein the moving device comprises:

an X-axis slide which is movable in an X-axis direction parallel to an X axis of an X-Y coordinate plane parallel to a surface of the circuit substrate;

an X-axis-slide moving device which moves the X-axis slide to an arbitrary position in the X-axis direction;

a Y-axis slide which is supported by the X-axis slide

such that the Y-axis slide is movable relative to the X-axis slide in a Y-axis direction parallel to a Y axis of the X-Y coordinate plane that is perpendicular to the X axis; and

a Y-axis-slide moving device which moves the Y-axis slide to an arbitrary position in the Y-axis direction, and

wherein the holding device is supported by the Y-axis slide.

13. A system according to claim 12, wherein the first and second image taking devices are provided at respective positions at which the first and second image taking devices can take the image of the leads of the electronic component and the image of the bottom surface of the electronic component, respectively, in a state in which the electronic component is on a path of movement thereof caused by a movement of the Y-axis slide relative to the X-axis slide.

14. A system according to claim 13, wherein the background forming device is provided on the X-axis slide.

15. A system according to claim 14, wherein the first image taking device comprises a camera which is provided at a position where the camera faces the background forming device through the electronic component held by the holding device.

16. A system according to claim 10, wherein the

second image taking device comprises a direction changing device which is provided on the X-axis slide such that a first portion of the direction changing device faces the electronic component held by the holding device, and a camera which is also provided on the X-axis slide such that the camera faces a second portion of the direction changing device.